

**BEFORE THE
PUBLIC SERVICE COMMISSION
OF SOUTH CAROLINA**

**In Re: Complaint and Petition for Relief)
Of South Carolina Net, Inc. d/b/a Spirit)
Communications v. BellSouth)
Telecommunications, LLC d/b/a AT&T)
Georgia, AT&T North Carolina, and AT&T)
South Carolina)**

Docket No. 2016-79-C

**DIRECT TESTIMONY OF JAMES STEVEN COVINGTON
ON BEHALF OF SOUTH CAROLINA NET, INC. d/b/a SPIRIT COMMUNICATIONS**

APRIL 7, 2016

DIRECT TESTIMONY OF JAMES STEVEN COVINGTON

ON BEHALF OF SOUTH CAROLINA NET, INC. d/b/a SPIRIT COMMUNICATIONS

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is James Steven Covington. My business address is 1500 Hampton Street, Columbia, South Carolina.

Q. ON WHOSE BEHALF ARE YOU PROVIDING YOUR TESTIMONY TODAY?

A. South Carolina Net, Inc. d/b/a/ Spirit Communications ("Spirit").

Q. BY WHOM ARE YOU EMPLOYED AND WHAT IS YOUR POSITION?

A. I am employed by Spirit and am the Traffic Manager for the company.

Q. PLEASE DESCRIBE YOUR JOB RESPONSIBILITIES AT SPIRIT.

A. As Spirit's Traffic Manager, I report to company management and my primary responsibilities include managing the least cost routing and traffic engineering of all transport carriers; performing switch usage analysis of DMS and soft switches; performing core circuit ordering and ensuring optimization of the network for both Internet transit and local service; providing CABS and AT&T billing analysis; performing LERG updates and allocation of NXXs for switches; providing business development planning and cost analysis.

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Q. WHAT IS YOUR PREVIOUS WORK EXPERIENCE?

A. I have 48 years of experience working in the communications industry and have worked in a variety of capacities over the years, including as a lineman, cable splicer, PBX installer and repairman, salesman, sales engineer, and traffic manager. I have received professional training in my various capacities working at GTE, Northern Telecom, Rolm, US West, Interline, Quest, and Spirit.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE STATE PUBLIC UTILITY COMMISSIONS?

A. I have not.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. I will describe Spirit’s network and how Spirit routes 911/E911 (hereinafter collectively “911”) calls made by its customers to the appropriate Public Safety Answering Points (“PSAPs”) in South Carolina. I will also describe Spirit’s efforts to terminate 911 interconnection facilities and trunks that were previously ordered and used by Spirit under the Spirit-AT&T Interconnection Agreement (“ICA”); steps Spirit took to implement the 911 services that Spirit now receives from Bandwidth.com, Inc. (formerly Dash911) (“Bandwidth”) for routing 911 calls made by Spirit’s customers to the appropriate PSAPs in South Carolina, as well as the 911 database services provided by Bandwidth to Spirit; and Bandwidth’s 911 call processing, including Spirit’s routing of 911 calls to Bandwidth for processing.

II. BACKGROUND

Q. PLEASE DESCRIBE SPIRIT'S NETWORK.

A. Spirit's network is comprised of over 5,000 route miles of fiber that connects data centers, carrier Points of Presences ("POPs"), cellular towers, and enterprise buildings. With a digital fiber optic network that is fast, reliable, secure, scalable, and powerful, Spirit is able to provide voice, data, and Internet to its customers. Spirit's voice product is Voice over Internet Protocol ("VoIP"), specifically interconnected VoIP, and includes local, long distance, and international calling. As a Competitive Local Exchange Carrier ("CLEC"), Spirit interconnects with other local exchange carriers ("LECs") and interexchange carriers ("IXCs") in South Carolina to exchange local, long distance, and international voice traffic.

Q. WHO IS THE 911 SERVICE PROVIDER IN SOUTH CAROLINA WHERE SPIRIT PROVIDES LOCAL EXCHANGE SERVICE?

A. There are several different 911 Service Providers (the entities that transmit 911 calls from Selective Routers to PSAPs and that provide PSAPs with the automatic location information ("ALI") and automatic number identification ("ANI") of 911 callers) in the areas of South Carolina where Spirit provides local exchange service. CenturyLink, Frontier, Windstream, and AT&T are all 911 Service Providers in areas of South Carolina where Spirit provides local exchange service.

1 **Q. HOW ARE 911 CALLS FROM SPIRIT END USER CUSTOMERS ROUTED TO**
2 **THE PSAP FOR HANDLING?**

3 A. In general, when a Spirit customer dials 911, the call is routed through Bandwidth's
4 network over 911 interconnection facilities and trunks to the Selective Router of the 911
5 Service Provider. At the Selective Router, a dip is performed into the ALI database to
6 obtain the Emergency Service Number, which is used to route the 911 call to the
7 appropriate PSAP.

8
9 **III. SPIRIT'S CURRENT ROUTING OF 911 TRAFFIC TO PSAPS IN SOUTH**
10 **CAROLINA**

11
12 **Q. HOW DOES SPIRIT ROUTE 911 CALLS FROM ITS END USER CUSTOMERS**
13 **AND ENSURE THAT THESE CALLS REACH THE PSAP TODAY?**

14 A. Spirit has an agreement with Bandwidth for 911 services, which includes routing of 911
15 calls from Spirit's end user customers to the appropriate PSAP through the Selective
16 Router of the 911 Service Provider for the customer's location, and maintaining an ALI
17 database of the registered locations of Spirit's customers, which customer location
18 information is provided to the PSAP. Spirit obtains these 911 services from Bandwidth
19 by interconnecting with Bandwidth using dedicated IP trunking, specifically virtual
20 private circuits, between Spirit's POP at 1500 Hampton Street in Columbia, SC, and both
21 of Bandwidth's POPs and data centers in Marietta, Georgia and Denver, Colorado.
22 Interconnecting with Bandwidth at both of its POPs allows for redundancy in call routing,
23 from Spirit to the Bandwidth routing servers, but also from Bandwidth to the Emergency

1 Services Gateway (“ESGW”), from which 911 calls are sent to the Selective Router of
2 the appropriate 911 Service Provider over a diverse network of TDM trunks or IP trunks
3 where available for further call routing to the appropriate PSAP. Connectivity from the
4 Selective Router to the PSAP is controlled by the PSAP through the 911 Service Provider
5 and may be a TDM or IP connection.
6

7 **Q. WHY DID SPIRIT CHOOSE TO USE A THIRD-PARTY PROVIDER OF 911**
8 **SERVICES FOR ROUTING 911 CALLS FROM ITS END USER CUSTOMERS**
9 **TO AT&T’S 911 SELECTIVE ROUTERS AND THE PSAPS IN SOUTH**
10 **CAROLINA?**

11 A. The IP routing and redundancy offered by third-party providers of 911 services offered
12 two distinct benefits over continuing to use the 911 services provided by AT&T. First,
13 Spirit’s customers benefit from the speed of 911 services transported over dedicated IP
14 networks to the Selective Routers, as well as the redundancy at all stages of transport to
15 the Selective Routers and with access to the ALI databases by Bandwidth and the PSAPs.
16 With Spirit’s Gigabit bandwidth virtual private connection to Bandwidth, customers also
17 benefit with greater access to the PSAPs, especially where PSAPs have implemented IP
18 trunking. Second, Spirit determined it could realize significant cost savings by
19 eliminating duplicative facilities and trunking to multiple Selective Routers across the
20 state.
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1 **Q. WHY DID SPIRIT SELECT BANDWIDTH TO PROVIDE 911 SERVICES?**

2 A. Spirit selected Bandwidth in order to improve the 911 services offered to customers, to
3 increase efficiency of 911 routing across Spirit's footprint, and to realize cost savings.
4 Spirit evaluated the 911 services offered by other third party providers of 911 services,
5 but determined that Bandwidth had a product mix that best met Spirit's needs.

6
7 **Q. PLEASE DESCRIBE THE 911 SERVICES PROVIDED BY BANDWIDTH TO**
8 **SPIRIT.**

9 A. Bandwidth provides 911 call routing to the appropriate 911 Service Provider and
10 Selective Router, using its own ALI database to determine caller location and then to
11 route and carry 911 calls to the appropriate Selective Router of the 911 Service Provider.
12 The Bandwidth 911 services also provide a number of additional benefits to Spirit and to
13 Spirit's customers.

14
15 Bandwidth provides nationwide coverage for its 911 services, eliminating Spirit's need to
16 establish 911 interconnection facilities and trunks with many different 911 Service
17 Providers across the three states where Spirit operates. Bandwidth provides dynamic
18 address validation using multiple sources. Specifically, Bandwidth evaluates customer
19 addresses provided by Spirit against the MSAG, Intrado's ALI, and Bandwidth's own
20 ALI to validate the customer addresses and ensure accuracy. To ensure proper 911 call
21 routing, Bandwidth provides a single platform for immediate subscriber registration of
22 addresses for new locations when customers move their VoIP phones. Bandwidth
23 provides the capability for bulk uploads of customer addresses into the Bandwidth ALI

1 database versus single address entry required for AT&T's ALI database. Bandwidth's
2 API provisioning is a dynamic Internet connection provided to Spirit that enables bulk
3 uploads of Spirit customer addresses. Bandwidth provides an end user portal branded for
4 Spirit. Bandwidth provides a 24x7 Network Operations Center ("NOC") that will answer
5 911 calls if a 911 call is not received by the PSAP, often due to limited PSAP ports. The
6 Bandwidth NOC will route these 911 calls to the appropriate law enforcement or
7 emergency service, or re-send them to the PSAP when a port has opened. In sum,
8 Bandwidth serves Spirit as a partner in providing advanced 911 services to Spirit's
9 customers.

10
11 **Q. DOES BANDWIDTH PROVIDE 911 SERVICES TO ANY OTHER LOCAL**
12 **EXCHANGE SERVICE PROVIDERS OR WIRELESS SERVICE PROVIDERS**
13 **IN SOUTH CAROLINA?**

14 A. To my knowledge, yes, Bandwidth provides 911 services to other local exchange service
15 providers in South Carolina, including one of Spirit's owner companies, which also has
16 encountered AT&T's refusal to disconnect 911 interconnection facilities and trunks.
17 Bandwidth also provides 911 services to wireless service providers across the country,
18 including in South Carolina.

19
20 **Q. WHERE DOES BANDWIDTH PROVIDE 911 SERVICES SIMILAR TO THOSE**
21 **USED BY SPIRIT IN SOUTH CAROLINA?**

22 A. Bandwidth is, to my knowledge, a facilities-based CLEC in 49 states and operates as a
23 VoIP Provisioning Center ("VPC") that maintains connections to the databases that

1 PSAPs use to obtain location information for properly routing 911 calls. Bandwidth's
2 nationwide network covers over 7,000 rate centers.

3
4 **Q. WHAT IS BANDWIDTH'S TRACK RECORD OF PROVIDING 911 SERVICES**
5 **TO LOCAL EXCHANGE SERVICE PROVIDERS IN SOUTH CAROLINA AND**
6 **OTHER STATES?**

7 A. To my knowledge, Bandwidth uses the most current geo-code databases, along with
8 MSAG and GIS files, to successfully provide PSAPs with customer locations in response
9 to 98% of 911 calls queried. If a 911 call is not answered by a PSAP, often due to limited
10 PSAP call-in ports, Bandwidth's NOC will answer the call, handling the call either by
11 routing it to the appropriate law enforcement or emergency service or by re-sending it to
12 the PSAP when a port has opened.

13
14 **Q. WHEN DID SPIRIT IMPLEMENT USE OF THE 911 SERVICES PROVIDED BY**
15 **BANDWIDTH?**

16 A. After conducting appropriate testing to ensure that 911 calls from Spirit's end user
17 customers would flow through to PSAPs via 911 interconnection facilities and trunks that
18 Bandwidth has in place with AT&T for routing 911 calls to the AT&T Selective Routers,
19 Spirit began routing 911 calls from its customers to Bandwidth for further routing to the
20 appropriate AT&T Selective Routers in October 2013.

1 **Q. HOW DID SPIRIT ENSURE THAT 911 CALLS FROM SPIRIT END USER**
2 **CUSTOMERS WOULD FLOW THROUGH TO PSAPS IN SOUTH CAROLINA**
3 **WHEN ROUTED THROUGH BANDWIDTH BEFORE IMPLEMENTING THE**
4 **BANDWIDTH 911 SERVICES?**

5 A. Prior to cutting over to the Bandwidth 911 services, Spirit thoroughly tested connections
6 and call flow with Bandwidth on several levels, such as audio checks and timing, to
7 ensure completion of calls.

8
9 **Q. HOW DOES SPIRIT ACCESS THE 911 SERVICES PROVIDED BY**
10 **BANDWIDTH?**

11 A. Spirit interconnects with Bandwidth using dedicated IP trunking, specifically virtual
12 private circuits, between Spirit's POP at 1500 Hampton Street in Columbia, SC, and both
13 of Bandwidth's POPs and data centers in Marietta, Georgia and Denver, Colorado.

14
15 **Q. DOES SPIRIT HAVE REDUNDANT FACILITIES IN PLACE TO ACCESS THE**
16 **911 SERVICES PROVIDED BY BANDWIDTH?**

17 A. Yes. Having dedicated IP trunking to Bandwidth's Marietta, Georgia POP and its
18 Denver, Colorado POP provides diversity in routing to Bandwidth. Bandwidth has
19 diversity between the routing servers at its two POPs and the ESWG, as well as to the
20 Selective Routers of the 911 Service Provider.

1 **Q. DESCRIBE HOW BANDWIDTH ROUTES 911 TRAFFIC FROM SPIRIT TO**
2 **THE AT&T SELECTIVE ROUTERS?**

3 A. When a 911 call from a Spirit end user customer arrives at either of the Bandwidth POPs,
4 Bandwidth performs an ALI lookup in its database comprised of the names, numbers, and
5 addresses for Spirit end user customers that have been provided by Spirit. The ALI
6 information determines the appropriate ESGW for routing the 911 call to the appropriate
7 AT&T Selective Router over 911 interconnection facilities and trunks that Bandwidth has
8 in place with AT&T. Once the 911 call arrives at the Selective Router, AT&T, as the 911
9 Service Provider, determines the appropriate PSAP to which to direct the 911 call and
10 routes the call accordingly. During the PSAP's process to validate the 911 caller's
11 location, the location request made by the PSAP to the 911 Service Provider is then
12 steered to the Bandwidth ALI database where the 911 caller's location is determined and
13 provided by Bandwidth to the PSAP.

14
15 **Q. DOES BANDWIDTH ROUTE 911 TRAFFIC FROM SPIRIT TO THE AT&T 911**
16 **ROUTERS OVER REDUNDANT FACILITIES?**

17 A. Yes, to my knowledge, Bandwidth has redundant 911 interconnection facilities and
18 trunking from its ESGWs to the AT&T Selective Routers.

1 **Q. ARE THERE ANY RISKS THAT 911 CALLS FROM SPIRIT’S END USER**
2 **CUSTOMERS WILL NOT REACH THE PSAPS BY USING THE 911 SERVICES**
3 **PROVIDED BY BANDWIDTH AS COMPARED TO SPIRIT’S PREVIOUS USE**
4 **OF 911 SERVICES ORDERED UNDER THE ICA FROM AT&T?**

5 A. No, there are no greater risks using the Bandwidth 911 services as compared to the
6 AT&T 911 services.

7
8 **Q. HAVE THERE BEEN ANY 911 CALLS FROM SPIRIT’S END USER**
9 **CUSTOMERS THAT HAVE NOT REACHED THE PSAPS OR APPROPRIATE**
10 **LAW ENFORMCENT OR OTHER EMERGENCY SERVICES IN SOUTH**
11 **CAROLINA SINCE SPIRIT BEGAN USING THE 911 SERVICES OF**
12 **BANDWIDTH?**

13 A. No, there have not been any 911 calls from Spirit’s customers that have not reached the
14 appropriate PSAPs or appropriate law enforcement or other emergency services in South
15 Carolina since Spirit began using Bandwidth’s 911 services. If a customer’s location
16 information has been entered improperly in the Bandwidth ALI database such that a 911
17 call is not properly routed to the appropriate PSAP, or if a PSAP’s call ports are full and
18 unable to handle a 911 call from a Spirit customer, Bandwidth maintains its own
19 emergency call center at its NOC and will handle 911 calls from Spirit’s customers by
20 manually ensuring that the call is routed to the proper response organization. This
21 service is a significant additional benefit to using the Bandwidth 911 services.

**IV. SPIRIT'S PREVIOUS ROUTING OF 911 TRAFFIC TO PSAPS IN SOUTH
CAROLINA**

Q. DOES SPIRIT HAVE AN INTERCONNECTION AGREEMENT WITH AT&T?

A. Yes.

**Q. DOES THE ICA WITH AT&T INCLUDE PROVISIONS FOR SPIRIT TO
ACCESS THE AT&T SELECTIVE ROUTERS AND THE 911 DATABASES BY
ORDERING 911 INTERCONNECTION FACILITIES AND TRUNKS FROM
AT&T?**

A. Yes, if Spirit wants to use the 911 services, including 911 interconnection facilities and trunking, offered by AT&T under the ICA, Spirit may order such facilities and trunks to the AT&T Selective Routers.

**Q. DOES THE ICA WITH AT&T INCLUDE PROVISIONS FOR SPIRIT TO
ACCESS THE AT&T SELECTIVE ROUTERS THROUGH FACILITIES
PROVIDED BY THIRD PARTIES OR THAT ARE SELF PROVISIONED?**

A. Yes.

1 **Q. DOES THE ICA WITH AT&T PROHIBIT SPIRIT FROM USING THE 911**
2 **SERVICES, INCLUDING 911 INTERCONNECTION FACILITIES AND**
3 **TRUNKS, OF A THIRD PARTY PROVIDER FOR PROVIDING 911 SERVICES**
4 **TO SPIRIT CUSTOMERS?**

5 A. No.
6

7 **Q. DID SPIRIT IMPLEMENT THE 911 PROVISIONS OF THE ICA BY**
8 **ORDERING 911 INTERCONNECTION FACILITIES AND TRUNKS FROM**
9 **AT&T TO THE AT&T SELECTIVE ROUTERS AND FOR ACCESS TO THE 911**
10 **DATABASES?**

11 A. Yes, Spirit ordered AT&T's 911 services when it interconnected with AT&T initially
12 after Spirit began providing local services in South Carolina.
13

14 **Q. DID SPIRIT REQUEST AT&T TO DISCONNECT THE 911**
15 **INTERCONNECTION FACILITIES AND TRUNKS ORDERED FROM AT&T**
16 **UNDER THE ICA?**

17 A. Yes, Spirit began issuing Access Service Requests ("ASRs") to AT&T requesting
18 disconnection of the 911 interconnection facilities and trunks that had been ordered from
19 AT&T beginning in fourth quarter 2013.
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1 **Q. DID AT&T DISCONNECT THE 911 INTERCONNECTION FACILITIES AND**
2 **TRUNKS AS REQUESTED?**

3 A. No, AT&T refused to disconnect the 911 interconnection facilities and trunks repeatedly,
4 stating that per AT&T policy it will be rejecting ASR requests to disconnect 911 facilities
5 and trunks. Spirit discontinued issuing ASRs for disconnection of 911 facilities and
6 trunks after AT&T made clear that it would continue rejecting all such ASRs. The 911
7 interconnection facilities and trunks have never been disconnected even though Spirit
8 does not send any 911 calls over those facilities and trunks.

9
10 **Q. DO CENTURYLINK, FRONTIER, AND WINDSTREAM REQUIRE SPIRIT TO**
11 **ORDER AND MAINTAIN 911 INTERCONNECTION FACILITIES AND**
12 **TRUNKS FROM THEM FOR SENDING 911 CALLS FROM SPIRIT'S SWITCH**
13 **TO THE 911 SELECTIVE ROUTERS IN THE SWITCHES OF THESE SERVICE**
14 **PROVIDERS?**

15 A. No. With regard to the areas where CenturyLink and Frontier are the 911 Service
16 Provider, both carriers accepted Spirit's request to disconnect 911 interconnection
17 facilities and trunks that had been ordered under the interconnection agreements with
18 these ILECs. With regard to the areas where Windstream is the 911 Service Provider,
19 Spirit was already using the 911 services provided by Bandwidth when it entered into an
20 interconnection agreement with Windstream and Windstream did not require Spirit to
21 order 911 interconnection facilities and trunks from Windstream as part of
22 interconnection. CenturyLink, Frontier, and Windstream all acknowledge that Spirit uses
23 the 911 services of a third party provider to send 911 calls from Spirit's customers to the

1 Selective Routers of each of these 911 Service Providers and then on to the appropriate
2 PSAPs.

3
4 **Q. DOES SPIRIT ROUTE ANY 911 CALLS FROM ITS END USER CUSTOMERS**
5 **TO THE PSAPS IN SOUTH CAROLINA OVER 911 INTERCONNECTION**
6 **FACILITIES AND TRUNKS PREVIOUSLY ORDERED FROM AT&T UNDER**
7 **THE ICA THAT HAVE NOT BEEN DISCONNECTED BY AT&T?**

8 A. No. All 911 calls made by Spirit customers are routed to Bandwidth for further routing
9 to the appropriate AT&T Selective Routers, where AT&T is the E911 Service Provider,
10 and then on to the appropriate PSAPs.

11
12 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

13 A. Yes.

STATE OF SOUTH CAROLINA)
)
COUNTY OF RICHLAND) CERTIFICATE OF SERVICE

The undersigned, Carrie L. DeVier, hereby certifies that she is employed by the law firm of Herman & Whiteaker, LLC as attorneys for South Carolina Net, Inc. d/b/a Spirit Communications (“Spirit”) and that she has caused the Direct Testimony of James Steven Covington in Docket No. 2016-79-C to be served by United States Postal Service, first class postage prepaid and affixed thereto, and addressed to the following on April 7, 2016:

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